

REMARKS

In the office action mailed February 8, 2005, claims 35-45 have been rejected. In response, Applicants have cancelled claims 35-45 and added new claims 46-48. Claims 46-48 are presently pending in the application.

Support For New Claims

In the interest of moving the application towards allowance, Applicants have cancelled claims 35-45 and added new claims 46-48 which are directed to a method for increasing the associative behavior of a starch solution.

Support for the new claims can be found on page 2, lines 12-13; page 3, lines 23-27; and Examples 6, 7 and 8, especially page 23, lines 4-7.

The Invention

Applicants invention is concerned with hydrophobizing an amylopectin starch and the surprising results of doing so. Amylopectin starches, according to the invention, are root or tuber starches having at least 95 wt.% amylopectin. Naturally occurring root or tuber starches contain, at most, about 80 wt.% amylopectin, and about 20 wt.% amylose.

As compared to other starches that contain equivalent amounts of amylopection, e.g. waxy maize, amylopectin root or tuber starches of the present invention have a much lower content of lipids and proteins. Lipids and proteins adversely affect the hydrophobation reaction.

Applicants have discovered that the hydrophobized amylopectin starch of the present invention increases the associative behavior of starch solutions. Other hydrophobically modified polymers (e.g. cellulose) have been shown to possess associative behavior.

However, until the present invention, no associative behavior has been observed when the backbone is formed by starch. See page 2, lines 1-11.

Rejections Under 35 U.S.C. §112

Claims 42-45 have been rejected as being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner contends that when the reactive group is glycidyl or quarternary ammonium, neither etherification or esterification occurs.

Claims 43-44 have been rejected as being indefinite with regards to the phrase "wherein the reactive group...or mixtures thereof" due to an alleged lack of antecedent basis for the term "mixtures."

Claims 42-45 have been cancelled and new claims 46-48 have been added. New claims 46-48 do not contain the rejected to terms. Therefore, the rejections under §112 have been rendered moot.

Rejections Under 35 U.S.C. §103

Claims 42-45 (directed to a process for increasing the associative behavior of a starch by attaching a hydrophobic substituent to the starch) have been rejected under §103 as being unpatentable over the combination of Seppala et al. (WO 97/03120) and Hovenkamp-Hermelink et al. (Theor. Appl. Genetics (1987), further in view of Bathelaan et al. (WO 94/24169), Lachocki (U.S. 5,563,251) and Harris et al. (U.S. 5,977,348).

According to the Examiner, because (i) Seppala teaches hydrophobic starches derived from potato, wheat, maize, etc. where the amylopectin content of the starch may be from 0 to 100%; (ii) Hovenkamp teaches the isolation of amylase-free starch from mutant potatoes; (iii) Bathelaan teaches a method for making polysaccharides via amidation; (iv) Lachocki teaches

a process for reacting hydrophilic polyols with hydrophobic epoxy compounds; and (v) Harris teaches conventional modifications of starches, it would have been obvious to one of skill in the art to react starch with a hydrophobic reagent and arrive at the present invention.

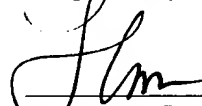
Applicants respectfully disagree and continue to contend that there is no disclosure or motivation in the prior art to increase the associative behavior of an amylopectin starch by hydrophobation. However, in the interest of moving the application towards allowance, Applicants have cancelled claims 42-45 and added new claims 46-48.

The new claims are directed to a method for increasing the associative behavior of a starch solution by adding a hydrophobized amylopectin starch to the starch solution. According to the new claims, the amylopectin starch is a root or tuber starch, or a derivative thereof, comprising at least 95 wt%. of amylopectin based on dry substance of the starch.

None of the cited documents disclose or suggest increasing the associative behavior of a starch solution by adding a hydrophobized amylopectin root or tuber starch. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the rejections based on the cited documents.

If the Examiner believes that a discussion with Applicants' representative would be of assistance, he is invited to contact the undersigned.

Respectfully submitted,



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